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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,798	12/08/2005	Andreas Tagesson	PD53573US01	7482

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EXAMINER	
NGUYEN, SIMON	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,798	TAGESSON ET AL.	
	Examiner	Art Unit	
	SIMON D. NGUYEN	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14,16,17 and 20-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14,16,17 and 20-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/6/09 have been fully considered but they are not persuasive.

According to the Applicant's Remarks, Boesch fails to teach or suggest:

a. breaking a first connection, between a signal generating unit and a signal processing unit in response to a control signal generated by the signal generating unit when signals in a second frequency band are transmitted on a second connection";

b. amplifying circuit in Boesch does not implement on a chip;

c. amplifying chip is not connected to the signal generating chip via first and second connections.

Before discussing to the teaching of Boesch, Examiner wants to point out the Applicant's invention. In fig.2, paragraphs 55, 57 of the application, there is only a switch (22) to break the connection 24 of band 2 (B2) which is controlled by the control signal (CTRL) and the applicant further suggests that it is also possible to provide it (switch) in the first connection (paragraph 55, 57), wherein this functionality can be provided by only using one switch (paragraph 57).

Responsive to a, carefully reviewing the Boesch's and Adar's references, Examiner disagrees for the following reasons: first Boesch and Adar, each discloses multiple switching ways to reduce the power loss when transmitting dual-band signals

by placing switches at different locations between the generating unit and the amplifying unit.

Boesch, in figs 4, 6, and 7 discloses the same technique of switching on/off between two frequency bands to be transmitted, discloses a first connection between a generating circuit and a processing circuit (amplifier 702,712, 604,414) via switch 722 for transmitting a 1900-MHz TDMA band and a second connection between the generating circuit (710,720) and the processing circuit (702, 712, 604, 414) via switch 726 for transmitting a 800-MHz band, wherein the switches 722, 724 will be broken when the 800-MHz band transmitting on the second connection and the switches 724 and 726 will be broken when the 1900-MHz TDMA band transmitting on the first connection (column 8 lines 20-47, column 10 line 11-51).

In fig. 8, Boesch discloses a power amplifying circuit 800, in low band signals, there are two connections between a generating circuit (for example, 715) and the amplifying circuit (802, 912 of PA 800), for TDMA operation, switch 822 is closed while switch 824 is open to pass the TDMA signal from the generating circuit to the amplifying circuit. for a 800-MHz band, switch 822 is open while switch 824 is closed caused the 800-MHz signals to pass from the generating circuit to the amplifying circuit (column 11 lines 25-49).

Secondly, Adar in figs. 5a discloses for a generating 800 MHz signal to transmit to the amplifier 152, switch 190 is closed and switch 192 is open. For the generating 1900 MHz signal to transmit to the amplifier, switch 190 is open and switch 192 is closed. In fig.4, Adar discloses one switch for connecting either 800 MHz signal or 1900

MHz signal, for a generating 800 MHz signal to transmit to the amplifier, the switch 154 is closed on a first connection (via 160) and for the generating 1900 MHz signal to transmit to the amplifier, the switch 158 is closed on a second connection 162. Therefore, these citations indicate that Adar disclosed the argument of point a in Remarks.

From the cited portions above, Boesch and Adar alone indeed discloses "when transmitting the signals in the first frequency band on the first connection, breaking the second connection between the signal generating circuit and the signal processing circuit and when transmitting the signals in the second frequency band on the second connection, breaking the first connection between the signal generating circuit and the signal processing circuit.

Responsive to b, it should be noted that the same network providing a plurality of frequency bands to mobile or cellular phones is known to those skilled in the art. Furthermore, the structure of transceiver in a base station and a cellular phone are the same, if the transceiver of the phone as taught by Boesch and Adar capable to operate different frequency bands, the transceiver of the base station as the time of Boesch and Adar invention also capable to do the same.

Responsive to c, a generating circuit or unit (CPU or modulator), as well as a processing unit or circuit (power amplifier) are built in chips are known to those skilled in the art, for example, Adar discloses the power amplifier chip (column 12 line 64, column 13 line 57).

Furthermore, Ono (7,139,538) used to combine with either Boesch or Adar to response to the arguments of b and c (see the below rejection).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 14, 16, 17, 22, 23, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boesch et al. (6,188,877) in view of Ono et al. (7,139,538).

Regarding claims 14, 16, 17, 22, 23, and 27, Boesch discloses a multi-band amplifier in a transmitter (abstract, figs. 7, 8), comprising: transmitting a 800 MHz signal band in a first connection to a signal processing unit (power amplifier (combined 702, 212, 414, 604); transmitting a 1900 MHz signal band in a second connection to a power amplifier; breaking the second connection to allow only the 800 MHz signal band to connect to the power amplifier by closing switch 724 and opening switches 722, 724 or connecting to the 19 MHz signal band by closing switch 722 and opening switches 724, 726, wherein the transmission signals are modulated which means the transmitter inherently comprises a modulator (figs. 4, 7, abstract, column 8 lines 20-47, column 10 line 11-51), wherein Boesch further discloses a power amplifying circuit 800, in low band signals, there are two connections between a generating circuit (for example, 715) and the amplifying circuit (802, 912 of PA 800), for TDMA operation, switch 822 is

closed while switch 824 is open to pass the TDMA signal from the generating circuit to the amplifying circuit. for a 800-MHz band, switch 822 is open while switch 824 is closed caused the 800-MHz signals to pass from the generating circuit to the amplifying circuit (column 11 lines 25-49), wherein Boesch discloses a power amplifying circuit (800 of fig. 8). However, Boesch does not discloses the generating unit as the generating chip and the processing unit as the processing chip, and the two bands provided by a same network.

Ono discloses a dual band transceiver (fig.1) using to communication with a base station (column 5 lines 35-38, column 6 lines 25-26) (which obviously means that the dual band transceiver provided by the same base station), wherein the dual band transceiver comprises a generating circuit chip (RF IC 110) and a power amplifying chip (200) (figs. 1, 2, 7-8, 10, column 4 lines 26-67, column 9 lines 30-67, column 10 lines 29-51). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Boesch, modified by Ono in order to save space as well cost of the transceiver.

4. Claims 14, 16-17, 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adar (5,774,017) in view of Ono (7,139,538).

Regarding claim 14, Adar discloses a multi-band amplifier in a transmitter (column 1 lines 4-6, fig. 5A, abstract), comprising: transmitting a 800 MHz signal band in a first connection to a signal processing unit (power amplifier (152); transmitting a 1900 MHz signal band in a second connection to a power amplifier; breaking the second

connection to allow only the 800 MHz signal band to connect to the power amplifier by turning off switch 192 or vice versa (fig. 5A, column 1 lines 4-6, column 2 lines 1-15, column 6 lines 8-25, 35-55, column 9 lines 57-62). It should be noted that a signal generating unit or a modulator is inherently in a transmitter; Adar further discloses the power amplifier chip (the processing chip) (column 12 line 64). However, Adar does not specifically disclose the generating unit as the generating chip and the two bands provided by a same network.

Ono discloses a dual band transceiver (fig.1) using to communication with a base station (column 5 lines 35-38, column 6 lines 25-26) (which obviously means that the dual band transceiver provided by the same base station), wherein the dual band transceiver comprises a generating circuit chip (RF IC 110) and a power amplifying chip (200) (figs. 1, 2, 7-8, 10, column 4 lines 26-67, column 9 lines 30-67, column 10 lines 29-51). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Adar, modified by Ono in order to save space as well cost of the transceiver.

Regarding claims 16, this claim is rejected for the same reason as set forth in claim 14, wherein the PA receives either the 800 MHz or 1900 MHZ signal bands.

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 14, wherein Adar discloses the processing circuit as a power amplifying chip (column 12 line 64, column 13 line 57).

Regarding claims 22, and 27, these claims are rejected for the same reason as set forth in claim 14.

Regarding claim 23, this claim is rejected for the same reason as set forth in claim 17.

Regarding claim 19 Adar further discloses RF switches (190, 192) for connecting/disconnecting either one of the two-transmission signals (fig. 5A).

Regarding claim 20, Adar discloses different modulation techniques for 800MHz and 1900 MHz (column 1 lines 46-54), which means the transmitter inherently comprises a modulator for generating the 800 or 1900 MHz signal bands).

Regarding claim 21, Adar further discloses the signal processing unit as a PA (fig. 5A, column 4 line 50).

Regarding claims 24-26, Adar further discloses the system can be applied in a cellular phone, a base station (column 2 lines 1-32, colun 6 lines 28-35).

Regarding claim 28-29, Adar further discloses the devices used in EGSM and DCS bands (column 1 line 17 to column 2 line15).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (571) 272-7894. The examiner can normally be reached on Monday-Friday from 7:00 AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen, can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 11, 2009

/SIMON D NGUYEN/
Primary Examiner, Art Unit 2618